

## RTS 2

## INSTALLATION MANUAL &amp; USER'S GUIDE

*L.R. Baggs*

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## 1. READ THIS FIRST

We recommend that the Dual Source System and Dual Source preamp be installed by an L.R. Baggs dealer or professional luthier. We do not warranty our products or provide technical assistance to home or hobby installers. L.R. Baggs is not responsible for any damage to the instrument or personal injury resulting from the installation, use, or misuse of this product.

## 2. INSTALLATION

### 2.1. Strapjack Installation:

Drill a 1/2" hole in the tail block using a step drill. Cover the area you are drilling with masking tape to protect the finish.

Remove the strap ring, retaining nut and one washer from the end of the jack. There should still be one star locking washer, one flat washer and a nut remaining on the mid section of the jack. Bring the jack down into the sound hole and through your pre-drilled hole in the tail block. Using the internal nut (be sure to include the flat and star washers), set the proper depth that will allow the smaller threaded section at the end of the jack to protrude out of the end of the guitar. When the jack is fully seated in the tailblock, there should be about 2 threads of the small threaded section remaining inside the hole. With the jack in place, lay the remaining washer over the threads and attach the external retaining nut until it's tight. Finish by attaching the strap button (it should cover the retaining nut and washer) carefully so as to not crack the finish of the guitar by asserting too much pressure.

### 2.2. Ribbon Transducer Installation:

#### Notes:

1. For optimum performance of this pickup, the bridge slot must have a clean, flat surface free of any debris or over-spray from the finish. The slot must be a minimum of .125" (1/8") deep but we suggest a depth of .187" (3/16") to avoid excessive saddle tilt (see figure 4).

2. Installing a .090" pickup in a .120" slot is not recommended.

3. Do not remove the black material that is affixed to the bottom of the pickup.

4. Avoid unnecessary hard bending of the pickup. Repeated removal and replacement of the pickup during the course of the installation is not advised. the product.

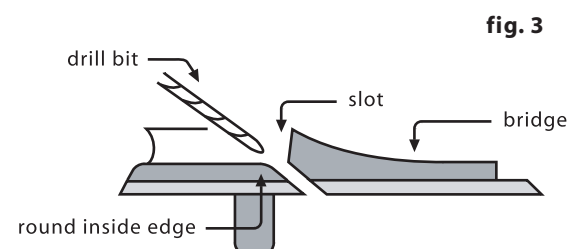
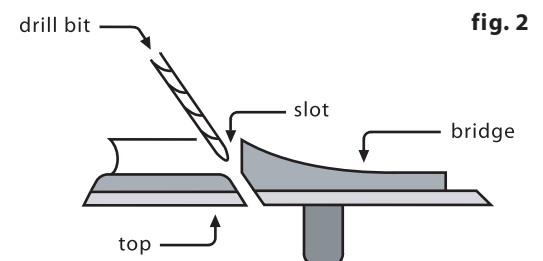
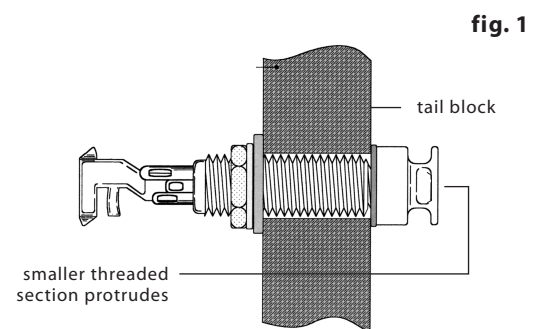
5. Do not use shims under the saddle or pickup as a remedy for string balance problems or to adjust the action.

6. Failure to secure the loose end of the pickup under the bridge will produce bizarre audio consequences and eventually ruin the pickup.

7. The quality of sound, output level, balance and feedback resistance are all determined by how well the pickup mates with the saddle and the bridge. Uneven or partial contact between the saddle and the pickup will cause a boomy sound with low output, excessive body sensitivity and poor string balance.

#### Installation:

1. Remove the strings from the guitar. If you wish to duplicate the string height



scribe a line along the front edge of the saddle where it extends above the bridge. The line will later be used as a guide when removing material from the bottom of the saddle to compensate for the thickness of the pickup (.025" total).

2. Remove the saddle to drill the hole for the pickup. The drill bit needs to be as large as the saddle slot will allow. Inspect the inside of the guitar and note the position of the braces in relation to the saddle slot. Drill at either end of the slot on the side that will enable you to avoid all braces as you penetrate the top, as shown in figures 2 and 3.

3. Feed the pickup into the slot from inside the guitar with the yellow side up. Inserting a toothpick or similar object through the hole from the outside is helpful in finding the location of the hole on the inside of the guitar. Sand the bottom surface of the saddle on a belt sander until the scribe line (from step 1) lines up with the bridge top. Leave the saddle just a hair tall and finish sanding the bottom by hand. It is best to do this against a machined flat surface with fine sand paper. Use a straight edge with a strong light source to inspect the flatness of your saddle.

**Important:** The fit of the saddle in the slot is the single most important factor in this installation. It is crucial that the bottom of the slot and the lower surface of the saddle be flat to make even contact with the pickup. The saddle should fit in the slot loose enough to be able to be just pulled out with your fingertips. If it is too tight or binds at all, this will have a negative effect on the string balance. Likewise, if the saddle is too loose, it will have a substantial forward tilt when under string pressure, causing it to make poor contact with the pickup (see figure 5).

A saddle that fits correctly in the slot will have a slight forward tilt under string pressure (see figure 6). The saddle material can be a key element in curing string balance problems. This pickup responds most favorably to a rigid saddle material such as micarta or bone. Using softer, more flexible materials may cause the outside strings to be lower in volume than the other strings.

If you are replacing the saddle, prepare the bottom of the new one as explained above (see step 3). Place it in the slot and scribe the same line on the front of it like the original saddle. To duplicate the action, lay the old saddle on the new one, match up the scribe lines, and trace the shape of the old saddle onto the new one. We recommend either bone or Micarta for your saddle. Softer materials tend to sound overly boomy.

4. Insert the pickup all the way into the slot, lay the saddle on top of it and temporarily secure it with a piece of tape. Remove the backing from the adhesive on the end of the pickup hanging inside the guitar and attach it to the bridge plate or the underside of the top as shown in figures 6 or 7. Be careful not to place the adhesive over the bridge pin holes.

5. Choose a location for the wire clip and secure the pickup wire. Remove the backing from the adhesive on the end of the pickup hanging inside the guitar and attach it to the bridge plate or the underside of the top as shown in figures 5 or 6. Be careful not to place the adhesive over the bridge pin holes.

## 2.2. Battery Bag Installation:

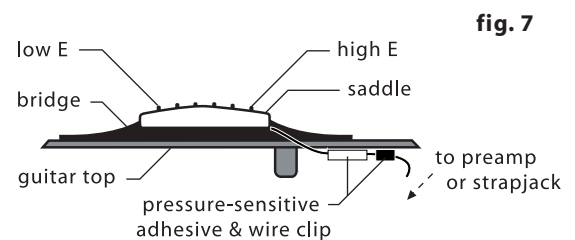
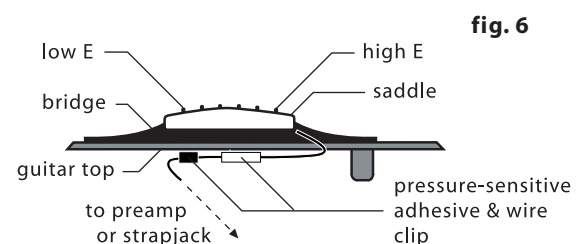
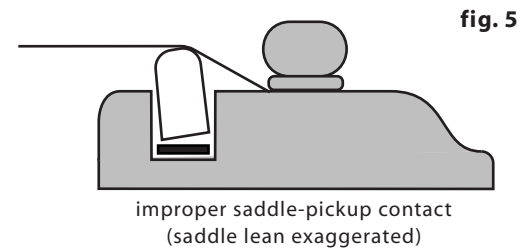
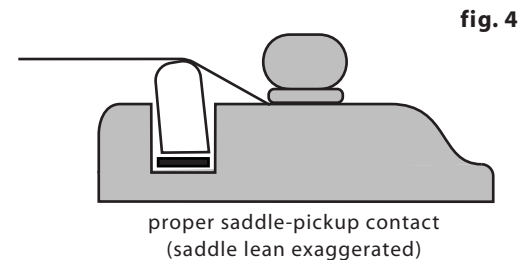
Stick the double-sided adhesive to an easily-accessible spot inside of the guitar. The battery can then be changed by opening the flap on the bag and pulling out the battery.

Two wire clips have been provided to secure the battery bag wire to the inside of the guitar.

## 3. USER'S GUIDE

The RTS 2 preamp by itself has no user controls. The output level has been set to the -10dB standard when partnered with the Ribbon Transducer. The RTS 2 preamp is designed to interface with just about anything you can plug into. The output jack acts as the switch; plug it in and it's on, unplug it and it's off. The easiest way to check the battery is to plug into your rig and play very hard on the lower strings. If you hear a distorted tone (and your gain is not too far high), drop in a fresh battery.

**Passive auxiliary channel:** It is possible to add a mini-mic or second pickup to



the RTS 2, but to avoid crosstalk, the second pickup must have a low impedance output. This requirement basically eliminates everything but magnetic pickups and mini-mics. **Do not use high impedance pickups such as the iBeam.**

**Adding a mini mic:** To add a mini-mic, solder the hot lead to positive and the ground lead to negative of the auxiliary passive input and run both pickup and mic down a stereo cord to a Mixpro. Be sure to turn the Mixpro's ring channel phantom power on or the mic will not work. The tip channel phantom power must be off. See the Mixpro manual for the locations of these switches.

**Adding a second pickup:** Add a second pickup the same way to the auxiliary passive channel, and run both signals down a stereo cord to a Mixpro, or use a stereo Y cord to two Para DIs. If you wish to use the RTS 2 with a second pickup into the Mixpro, make sure the phantom power switches on the Mixpro are turned off for both ring and tip channels.

Often in a two pickup system the "default" pickup will be preferred to be on the tip contact of the strapjack. On the RTS II preamp, the Ribbon Transducer output is routed to the tip contact but a provision has been made with solder bump jumpers on the PC board to reverse the pickup assignment, as shown in figures 1 and 2. Using a soldering iron with a small tip, scrape the older solder off the jumpers until a small gap appears between the jumper pads. Then add solder across the other gap, until a bridge forms. Do this on both jumpers so they look like figure 2. This will allow the second pickup to be the default pickup on the tip and the Ribbon Transducer to be on the ring. Plugging and unplugging the cord will still turn the preamp on and off.

**Pairing the RTS II with the Gigpro or Mixpro:** The RTS II preamp has a built-in EQ curve. Both the Gigpro and Mixpro preamps also have a built-in EQ curve when the controls are set "flat" at 12:00. If you wish to use the Gigpro or Mixpro with the RTS II, we recommend that you back off the EQ on the Gigpro or Mixpro to avoid a double EQ. Reduce the gain control and low cut entirely and start with both the bass and treble EQ on the Gigpro or Mixpro in the 8:00 to 9:00 positions, then adjust to taste.

fig. 8

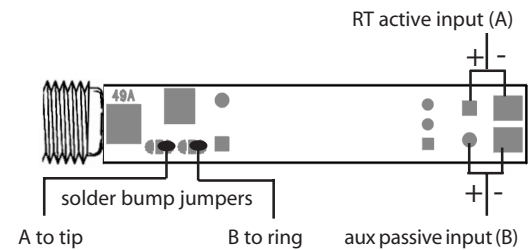


fig. 9

